OPTICAL MOUSE AND METHOD FOR PERFORMING CONFIGURED FUNCTION THEREOF

TECHNICAL FIELD

[0001] The present disclosure relates to an optical mouse and a method for performing a configured function thereof, and more particularly, to an optical mouse with multiple configured functions and a method for performing the configured functions thereof.

BACKGROUND ART

[0002] Modern life is closely related to computer devices. A mouse has become one of the essential provisions on the periphery of a computer device. As with a keyboard, the mouse provides a user with easy operation and performance of computer programs. In particular, optical mice have replaced traditional roller ball mice since their appearance, and thus optical mice have brought convenience to operation of computers. However, for a conventional optical mouse, multi-level cursor displacement resolution is configured through a button. The button is disposed on a housing of the optical mouse. The button is directly electrically connected to a control unit of the optical mouse. Accordingly, the control unit performs corresponding configured functions based on the state or position at which the button is pressed.

[0003] For example, the conventional optical mouse has three cursor displacement resolutions, for example, 450 dpi, 1800 dpi, and 3500 dpi. The three cursor displacement resolutions are disposed at three addressed locations on the housing. When the button is adjusted to the addressed location of 1800 dpi, firmware of the control unit will perform a configured function of cursor displacement resolution of 1800 dpi. Similarly, when the button is adjusted to the addressed location of 450 dpi, firmware of the control unit will perform a configured function of cursor displacement resolution of 450 dpi.

[0004] U.S. Pat. No. 7,532,200 B2 disclosed a switching circuit and a mouse microcontroller. The switching circuit is used to configure multi-level cursor displacement resolution of a conventional optical mouse. When the conventional optical mouse requires added selections of cursor displacement resolution, the switching circuit will become a complex and interleaved switching circuit disposed on a circuit board of the conventional optical mouse. Thus, the complex and interleaved switching circuit results in inconvenience in the manufacturing process.

SUMMARY OF THE PRESENT INVENTION

[0005] One object of the present disclosure is to provide an optical mouse, in which multiple configured functions are achieved through the design of turning off light emission from a light emitting unit or blocking light outputted by the light emitting unit, thereby improving convenience of the optical mouse in use.

[0006] The present disclosure proposes an optical mouse, comprising a control unit, an optical sensing unit, and a switch unit. The optical sensing unit is electrically connected to the control unit. The switch unit is electrically connected to a light emitting unit. When the switch unit is in a turn-on state, the light emitting unit emits light toward a tracing surface, the optical sensing unit senses light reflected by the tracing surface and transfers optical data to the control unit, and the control unit generates a pointer control signal of movement of a pointing cursor based on the optical data. When the switch unit is in a turn-off state, the light emitting unit stops emitting light toward the tracing surface, the optical sensing unit senses a darkness and transfers darkness data to the control unit, and the control unit performs a configured function based on the darkness data.

[0007] The present disclosure proposes an optical mouse, comprising a control unit, an optical sensing unit, and a shutter unit. The optical sensing unit is electrically connected to the control unit. The shutter unit is disposed between a light emitting unit and a light guiding unit. When the shutter unit is in a non-light-blocking state, the light emitting unit emits light toward a tracing surface, the optical sensing unit senses light reflected by the tracing surface and transfers optical data to the control unit, and the control unit generates a pointer control signal of movement of a pointing cursor based on the optical data; when the shutter unit is in a light-blocking state, the shutter unit blocks light emitted by the light emitting unit toward the light guiding unit, the optical sensing unit senses a darkness and transfers darkness data to the control unit, and the control unit performs a configured function based on the darkness data.

[0008] The present disclosure proposes a method for performing a configured function of an optical mouse, wherein the optical mouse is provided with a control unit, an optical sensing unit, and a light emitting unit, and the control unit is electrically connected to the optical sensing unit. The method includes: a switch unit being electrically connected to the light emitting unit, the switch unit being in a turn-off state to cause the light emitting unit to stop emitting light; sensing a darkness and transferring darkness data to the control unit by the optical sensing unit; and performing a configured function based on the darkness data by the control unit.

[0009] The present disclosure proposes a method for performing a configured function of an optical mouse, wherein the optical mouse is provided with a control unit, an optical sensing unit, and a light emitting unit, and the control unit is electrically connected to the optical sensing unit. The method includes: a shutter unit being used to block light outputted by the light emitting unit, the shutter unit being in a light-blocking state to cause the shutter unit to block light emitted by the light emitting unit toward a light guiding unit; sensing a darkness and transferring darkness data to the control unit by the optical sensing unit; and performing a configured function based on the darkness data by the control unit.

[0010] Specific means of the present disclosure use an optical mouse, in which through the design of turning off light emission from a light emitting unit or blocking light outputted by the light emitting unit, the optical mouse is caused to generate a darkness or darkness pattern, and a control unit determines variations in shadings such as the darkness or darkness pattern to perform corresponding configured functions, thereby improving convenience of the optical mouse in use.

[0011] The summary above and the embodiments below are intended to further illustrate the technical means and effects of the present disclosure, but the described embodiments and the drawings are only provided for reference and description and not intended to limit the present disclosure.